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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,385	09/27/2006	Atsushi Ohma	040356-0596	9441

22428 7590 07/23/2010

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EXAMINER	
WANG, EUGENIA	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
07/23/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,385	OHMA ET AL.	
	Examiner	Art Unit	
	EUGENIA WANG	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *17-20 and 22-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,16 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment received June 28, 2010:

a. Claims 15-28 are pending with claims 17-20 and 22-28 being withdrawn as drawn to unelected species.

b. The previous rejection of record is maintained, thus the action is final.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 15, 16, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Breault (US Pat. No. 4,851,377).

Regarding claim 15, Breault discloses a fuel cell comprising: an electrolyte membrane (see col. 5, lines 18-20); and a cathode catalyst layer containing a metal catalyst, the cathode catalyst layer facing a surface of the electrolyte membrane in plural regions including a specific region in which a differential electric potential between the cathode catalyst layer and the electrolyte membrane during an electric power generation reaction of the fuel cell is larger than in a region other than the specific region; wherein one of an amount of the metal catalyst and a specific surface area of the metal catalyst in the cathode catalyst layer in the specific region has a larger value than in the region other then the specific region. Breault discloses that the variation in reaction rate gives rise to cost and performance problems in a fuel cell, and that the current density across a given area of the electrode is proportional to the local reaction

rate (see col. 1, lines 36-39). Since the structure of the Breault's fuel cell is the same as the fuel cell claimed by applicant they would operate in a similar manner and inherently possess a specific region wherein the differential electric potential between the cathode catalyst layer and the electrolyte membrane is larger than in other regions. Breault teaches that convention fuel cells with uniform catalyst loading have reaction rates that are higher at the gas inlet side than the gas outlet side (see col. 5, lines 35-39). By teaching a fuel cell electrode with a non-uniform catalyst with an increase in catalyst loading toward the outlet side of the cell, he is able to provide the electrode with substantially uniform current density (see col. 5, lines 56-62). Furthermore, Breault teaches that the distribution of catalyst required for optimization of a particular application must be established by analysis and experimentation. Therefore it is within the ambit of one of ordinary skill in the art to experiment and optimize the distribution of catalyst.

Regarding claim 16, Breault discloses the fuel cell as defined in Claim 15, wherein the cathode catalyst layer contains catalyst particles each of which comprises a support (see col. 3, lines 11-12), and the metal catalyst supported on the support, and wherein an amount of the catalyst particles per unit area of the cathode catalyst layer in the specific region is set to a greater value than in the region other then the specific region (see col. 5, lines 1-17).

Regarding claim 21, Breault discloses the fuel cell as defined in Claim 15, wherein the specific region is set as a region in which a current density during the

electric power generation reaction of the fuel cell is smaller than in the region other then the specific region (see col. 5, lines 35-45 and lines 56-57).

Response to Arguments

3. Applicant's arguments filed June 28, 2010 have been fully considered but they are not persuasive.

Applicant argues that claim 15 differs from Breault, as Breault does not cause the specific region to generate a larger electric potential between the cathode catalyst layer and the electrolyte membrane during an electric power generation reaction of the fuel cell than in the region other than the specific region, since Breault teaches of leveling out differential electric potential.

Examiner respectfully disagrees. First it is submitted that Breault mentions current density (not differential electric potential). Secondly, it is noted that Applicant's claim language is broader than Applicant is reading. The claim language only requires that "during an electric power generation reaction" that the differential electric potential is larger than a specific region (region with more catalyst) than the other region. However, it is submitted that such is the case – specifically that if different positions upon the fuel cell electrode were provided the same power generation reaction conditions (i.e. the same amount of reactants) at that point, the position with more catalyst would inherently provide a higher electric potential (as the reaction is occurring more quickly in order to do so). There is nothing in the claim language to bar such an interpretation of the claim limitations. Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d

1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Also, limitations appearing in the specification but not recited in the claim are not read into the claim. See *In re Zletz*, 893F.2d 319, 321-22,13 USPQ2d, 1320, 1322 (Fed. Cir. 1989). Additionally, since the structure of Breault is the same as that of the claimed invention, at the very least, under some reaction condition, the structure of Breault would be capable of providing the regions with the claimed differential electric potential properties. (For non-limiting example, one of ordinary skill in the art would expect that a very low reactant concentration at a fast flow would react better/more quickly at the region with more catalytic material.)

It has been held that the recitation of an element is "capable" of performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson,* 69 USPQ 138.

While intended use recitations and other types of functional language cannot be entirely disregarded. However, in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The manner of operating the device does not differentiate an apparatus claim from the prior art. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Accordingly, such arguments are not found to be persuasive, and the rejection of record is maintained.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on a flex schedule, generally 6 - 3:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. W./
Examiner, Art Unit 1795

/Gregg Cantelmo/
Primary Examiner, Art Unit 1795